

### *Abstract*

The present invention relates to a process for stereoselective or regioselective chemical synthesis which generally comprises reacting a nucleophile and a chiral or prochiral cyclic substrate in the presence of a non-racemic, chiral catalyst to produce a stereoisomerically- and/or regioisomerically-enriched product. The present invention also relates to hydrolytic kinetic resolutions of racemic and diastereomeric mixtures of epoxides.